

IN THE SPECIFICATION:

Please replace paragraph number [0029] with the following rewritten paragraph:

[0029] In addition to providing a finished rubber composition having excellent mechanical properties, the precursor has various rheological properties that facilitate related manufacturing processes using the precursor. Various precursor formulations that are described above have demonstrated the following rheological properties:

- a Mooney viscosity ranging between 60 and 80 determined as ML1 + 4 at 100° C (212° F),
- a TS2 ranging between 3.0 and 4.5 minutes determined by an oscillating disk rheometer at 160° C (320° F) over a 5° arc,
- a minimum torque (ML) ranging from 0.45 to 1.13 N·m (4.0 to 10.0 in.-lb.) determined by an oscillating disk rheometer at 160° C (320° F) over a 5° arc,
- a maximum torque (MH) after 2 hours ranging between 4.5 and 7.9 N·m (40 and 70 in.-lb.),
- an Mc(90) ranging between 4.0 and 6.8 N·m (35 and ~~60 in.-lb.~~ 60 in.-lb.) determined by an oscillating disk rheometer at 160° C (320° F) over a 5° arc, and
- a tc(90) ranging from 20 and 45 minutes determined by an oscillating disk rheometer at 160° C (320° F) over a 5° arc.

Please replace paragraph number [0044] with the following rewritten paragraph:

[0044] Testing of solid rubber compositions determined that Example 2 had superior properties of strength, flexibility and adhesion, so a scaled-up batch of Example 2 was produced in a 3000 gram batch size. A two-pass procedure was again used, with mixing speeds of 40 rpm in a RELIABLE® brand mixer. Dump temperatures were 104° C (220° F) and 68° C (~~155° F~~ 155° F) for the first and second passes, respectively.

Please replace paragraph number [0047] with the following rewritten paragraph:

[0047] According to another aspect of the invention, a precursor as previously described was used to make a shear ply layer. The load-bearing structural capacity of a shear ply layer including the solid rubber composition was tested by curing a rubber sample, laminating the rubber sample to a graphite fiber/epoxy composite, then curing the composite. Similar laminates were made and tested using the prior art silica-filled composition. The samples were tested at 22° C (72° F) and 38° C (100° F) using a conventional lap shear testing machine at a crosshead rate of 0.051 cm./min. (~~0.02 in.~~ 0.02 in./min.). FIG. 3 provides a comparison of the shear strength values for samples including an “NBR Control” for the silica-filled composition (left bar on graph), as well as a historical average for numerous silica-filled samples based upon Thiokol Propulsion quality control procedures involving the silica-filled composition (middle bar on graph). These values do not exceed 17,327 kPa (2500 psi) and are compared to 25,924 kPa (3760 psi) for the Example 2 sample (right bar on graph).